

4,497,359 discloses a set of equations which to determine the amount of squeezing pressure applied to his molten metal.

More specifically, a review of Figure 2 of Suzuki U. S. patent 4,497,359 discloses that he has a "squeeze plunger 36" which is driven into the molten metal 32 that is located in "an enlarged portion 35a of the squeeze sleeve 35" which he shows forms "a ring-like fin A in the enlarged portion 35a of the squeeze sleeve 35" (column 4 lines 60-66) as the metal solidifies. Thus Suzuki

1. drives his plunger into the molten metal.
2. forms a ring-like fin A in the mold by the driving of his squeeze plunger 36 into the molten metal.
3. After the casting process, removes the metal in his accumulation space 32 by machining (column 16 lines 44).

The reason for removal of the metal proximate his "squeeze plunger" is found in column 16 lines 60-63 of Suzuki where he states the "surface defect and segregation adversely affect the strength and workability of the die cast product".

Thus does not only Suzuki use a Squeeze plunger to increase the pressure on his molten material he then removes the solidified metal by machining away the region of the mold where the squeezing occurred once the product is die cast.

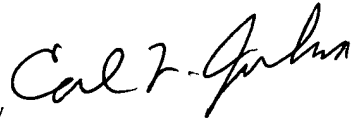
In contrast to the use of a squeeze plunger of Suzuki the applicant uses "a retractable member for defining a further portion of the interior mold surface" and in conjunction with the retractable member uses a "retaining member" that is "retracted in response to an increase in the cavity pressure caused by the solidification to displace the face relative to sidewall where the face and the fixed sidewall contain a solidification volume that is greater than the casting volume. A reference to Figure 1 shows that in the state where the mold contains no molten metal the face 16a of the retractable member 16 is located a distance X1 within the mold. Note, as the metal is injected under

pressure the retractable member 16 retracts and finally at the solidification phase (Figure 3) the retractable member 16 has retracted to complete the mold face.

In regard to the claims it is pointed out the office has taken the position that that the retractable member as claimed in claim 1 is the Suzuki “plunger tip” and that the retaining member, which is in is the Suzuki “squeeze plunger 36”. However, the retaining member, which is pointed out in dependent claim 2 is a “spring” which is not found in Suzuki. Therefore the rejection of claim 2 on Suzuki as well as claim 3 is in error since no “spring” is found in Suzuki.

In addition, claim 1 points out that the “retaining member is retractable in response to an increase in the cavity pressure caused by solidification” Squeeze plunger 36 does the opposite, namely it is driven into the mold as evidenced by Figure 2 and Figure 3.

Claim 1 further points out that the retaining member maintains “said face ( i.e the face on the retractable member) in position during an injection molding” This feature is not present in Suzuki.

A handwritten signature in black ink, appearing to read "Carl L. Johnson". The signature is fluid and cursive, with the first name "Carl" being more prominent.

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